

CLAIMS

1. A vehicle design database system, comprising:
 - a plurality of records which describe major elements of a vehicle, the records describing substantially only major elements;
 - 5 at least one indication of the relative assembly of the major elements;
 - a plurality of references to workers in charge of the major elements; and
 - a plurality of references to documents related to the major elements.
- 10 2. A system according to claim 1, wherein the plurality of records comprise a record for each of the major elements of the vehicle, and the major elements comprise elements which interact with other elements of the vehicle.
- 15 3. A system according to claim 1 or claim 2, wherein the at least one indication of the relative assembly comprises an indication in each record of the major elements which are functionally related to the element described by the record.
- 20 4. A system according to any of the preceding claims, wherein the at least one indication of the relative assembly comprises an indication in each record of the coordinates in the vehicles framework of the element described by the record.
5. A system according to any of the preceding claims, wherein the at least one indication of the relative assembly comprises an indication for at least one of the major elements of an access door of the element.
- 25 6. A system according to any of the preceding claims, wherein the at least one indication of the relative assembly comprises an indication for at least one of the major elements of a compartment in which the element is located.
- 30 7. A system according to any of the preceding claims, wherein the at least one indication of the relative assembly comprises an indication in each record of the major elements with which the element interacts.
8. A system according to any of the preceding claims, wherein the database substantially does not comprise drawings.

9. A system according to any of the preceding claims, wherein the database requires less than 1Gbytes of storage space.

5 10. A system according to claim 9, wherein the database requires less than 100Mbytes of storage space.

11. A system according to any of the preceding claims, wherein the database includes records for less than 10% of the elements of the vehicle.

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12. A system according to claim 11, wherein the database includes records for less than 1% of the elements of the vehicle.

13. A system according to any of the preceding claims, wherein the references to the documents comprise hypertext links.

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14. A system according to any of the preceding claims, wherein the documents comprise diagrams including the elements.

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15. A system according to any of the preceding claims, wherein the documents comprise procurement invoices of the elements.

16. A system according to any of the preceding claims, wherein each of the elements is identified by a unique code which is assigned according to a functionality of the element.

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17. A system according to any of the preceding claims, wherein the database is associated with at least one computerized tool such that an update of information in the at least one computerized tool automatically updates the database.

30 18. A system according to any of the preceding claims, wherein the database is accessible over a network which connects a plurality of remote processors.

19. A system according to any of the preceding claims, wherein the database is stored on a portable computer.

20. A system according to any of the preceding claims, comprising input and output information of at least one data evaluation program molded into a form of the database.

5 21. A system according to claim 20, wherein the at least one data evaluation program comprises a design-to-cost program.

22. A system according to claim 20 or claim 21, wherein the at least one data evaluation program comprises a design-for-manufacture-and-assembly program.

10 23. A method of forming a vehicle design index, comprising:
automatically gathering, from a plurality of computerized tools, information on substantially all major elements of a vehicle; and
storing the information in the index.

15 24. A method according to claim 23, wherein gathering the information comprises gathering location information of the major elements.

20 25. A method according to claim 23 or claim 24, wherein gathering the information comprises gathering interconnection information of the major elements.

26. A method according to any of claims 23-25, wherein gathering the information comprises gathering references to documents describing the major elements.

25 27. A method according to any of claims 23-26, wherein a company designing the vehicle comprises at least one group of workers that are restricted from viewing at least some information relating to the vehicle and wherein gathering the information comprises gathering information which is not restricted from viewing by substantially any of the workers of the company.

30 28. A method according to claim 27, wherein gathering the information comprises gathering from tools which carry information restricted from viewing by at least one group of workers within the company designing the vehicle.

29. A method according to any of claims 23-28, wherein storing the information comprises storing the information in a database.

30. A method according to any of claims 23-29, wherein gathering the information
5 comprises gathering information on elements of an aircraft.

31. A method according to any of claims 23-30, wherein automatically gathering the information comprises automatically gathering the information periodically.

10 32. A method of providing information between workers designing a vehicle, comprising:
gathering, for each of a plurality of major elements of the vehicle, information
regarding the element, including a plurality of different indications of the relative assembly of
the element and a plurality of references to workers in charge of the element;
storing the gathered information in a database; and
15 searching the database for information on one or more of the major elements.

33. A method according to claim 32, wherein gathering the information comprises gathering references to documents related to the major elements.

20 34. A method according to claim 32 or claim 33, wherein the plurality of different
indications of the relative assembly of the element comprise at least one indication of the
location of the element.

25 35. A method according to claim 34, wherein the at least one indication of the location of
the element comprises an indication of the coordinates of the element within the vehicle.

36. A method according to claim 34 or 35, wherein the at least one indication of the
location of the element comprises an indication of an access door to the element within the
vehicle.

30 37. A method according to any of claims 34-36, wherein the at least one indication of the
location of the element comprises an indication of a compartment in which the element is
located.

38. A method according to any of claims 32-37, wherein the plurality of different indications of the relative assembly of the element comprise a list of the major elements with which the element is connected.

5 39. A method according to any of claims 32-38, wherein the plurality of different indications of the relative assembly of the element comprise an indication of a system to which the element belongs.

40. A method according to claim 39, wherein the indication of the system to which the
10 element belongs comprises an indication of a relative function of the element within the system.

41. A method according to any of claims 32-40, comprising running a verification routine which finds design faults, on the database.

15 42. A method according to claim 41, wherein running the verification routine comprises running a routine which checks for elements which are distanced from each other less than a minimal allowed distance.

20 43. A method according to any of claims 32-42, wherein the database does not include diagrams or drawings.

44. An aircraft designed using the method of providing information of any of claims 32-43.

25 45. A method of labeling major elements of an aircraft, comprising:
determining for each major element a system to which the element belongs; and
assigning each of the major elements with a code which is unique to each occurrence of
the element in the aircraft, responsive to the system to which the element belongs.

30 46. A method according to claim 45, wherein the major elements include elements belonging to the structure of the aircraft.

47. A method according to claim 45 or 46, wherein assigning the code comprises assigning a code having at least three digits in common with digits of a part number of the element, for

substantially all the major elements of the aircraft.

48. A method according to any of claims 45-47, wherein assigning the code comprises assigning a plurality of codes to at least one single element.

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49. A method according to claim 48, wherein the plurality of codes assigned to the at least one single element comprise codes which represent connection ends of the element.

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50. A method of referencing workers working on an aircraft, comprising:
assigning configuration management codes to various aspects of the aircraft;
assigning each part of the aircraft, a part number code which includes the assigned configuration management code of the aspect to which the part belongs; and
assigning worker codes which include the configuration management code of the aspect on which the worker works.

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51. A method according to claim 50, wherein the configuration management codes comprise three digits.

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52. A method according to claim 50 or 51, comprising preparing a responsibility matrix which references workers by the assigned worker codes.